FLORENCE COPPER

FLORENCE COPPER INC.
1575 W. Hunt Highway, Florence, Arizona 85132 USA
florencecopper.com

January 14, 2019
File No. 132473-003

ADEQ Water Quality Compliance Section
Mail Code 5415B-1
1110 West Washington Street
Phoenix, Arizona 85007

Attention: Mr. David Lelsz

Subject: Weekly Monitoring Report for Week Ending 1/05/2019
Florence Copper, Production Test Facility
Aquifer Protection Permit No. 106360, LTF 61845

Dear Mr. Lelsz:

Florence Copper is submitting this report in accordance with Table 4.1-8 and Section 2.7.4.4 of the Production Test Facility Temporary Aquifer Protection Permit (APP) No. 106360.

In accordance with Table 4.1-8 of the APP, this report includes In-Situ Best Available Demonstrated Control Technology (BADCT) compliance monitoring for the PTF that is required to be reported on a weekly basis including:

- Recovered volume to injection volume,
- Inward hydraulic gradient, and
- Maximum injection pressure.

A map showing the location of the PTF injection, recovery, and observation wells is included as Figure 1.

Recovered Volume to Injection Volume

A summary of the injected and recovered volumes for the week 12/30/2018 to 1/05/2019 is included in Table 1. The total injected and recovered volumes for the PTF as a daily total are also presented on Figure 2.

During the reporting period no exceedance of the alert level was measured for recovered volume to injected volume. The alert level is the recovered volume shall exceed the injected volume.

Inward Hydraulic Gradient

Table 2 includes a summary of water levels in the recovery and observation well pairs. Hydrographs showing the water level elevation for each well recovery and observation well pair are included in Figure 4.

During the reporting period, a pump motor failed in recovery well R-08 (PW-12) late in the evening on December 31. Florence Copper operators adjusted injection and recovery flow rates to ensure an appropriate inward hydraulic gradient was maintained until the pump was replaced on January 2nd with a new motor. A groundwater contour map generated from manual measurements at the observation, recovery, oxide, and the

two downgradient monitoring wells based on the 1/2/19 manual measurements clearly demonstrates that hydraulic control was maintained (Figure 3). (It is important to note that the daily measurement period runs from 7:00 AM to 7:00 AM the following day. Therefore, monitoring data for R-08 (PW-12) was available for the majority of the period ending 1/1/19, and for the period ending 1/3/19.

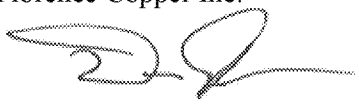
Injection Pressure

A summary of the injection pressures during the reporting period are included as Table 3.

During the reporting period no alert levels were exceeded for injection pressure, the injection pressure limit for the injection wells is limited by the fracture gradient of 0.65 pounds per square inch (psi) per foot. For the PTF injection wells this pressure limit equates to 104 psi. Injection well I-02 pressures reflect the influence of pumping rate adjustments to maintain hydraulic control in the absence of R-08 (PW-12).

Please contact me at 520-374-3984 if you require any additional information.

Sincerely,
Florence Copper Inc.



Dan Johnson
Vice President – General Manager

Attachments:
Tables and Figures

cc: Nancy Rumrill, United States Environmental Protection Agency

TABLES

Table 1. Injected and recovered volumes for the week 12/31/18 to 1/5/2019

Date	Time	Daily Raff Flow	Daily PLS Flow	PLS/Raff
12/30/2018	7:00:00 AM	302992.0	357388.7	1.18
12/31/2018	7:00:00 AM	313059.8	368273.8	1.18
1/1/2019	7:00:00 AM	313100.0	352185.8	1.12
1/2/2019	7:00:00 AM	246700.0	332196.0	1.35
1/3/2019	7:00:00 AM	253700.0	335262.0	1.32
1/4/2019	7:00:00 AM	308700.0	370921.0	1.20
1/5/2019	7:00:00 AM	311300.0	368690.0	1.18

Table 2. Average daily water levels in the recovery and observation well pairs (amsl)

Well Pairs Avg Elev	12/30/18	12/31/18	1/1/19	1/2/19	1/3/19	1/4/19	1/5/19
PW-05 (R-01)	1241.13	1241.76	1242.10	1238.61	1239.09	1241.23	1242.90
O-01	1243.15	1244.07	1244.48	1240.74	1241.24	1243.86	1245.57
O-07	1243.03	1243.76	1244.30	1241.03	1241.11	1243.68	1245.13
PW-06 (R-02)	1239.84	1242.04	1242.38	1238.07	1238.90	1241.15	1242.89
O-01	1243.15	1244.07	1244.48	1240.74	1241.24	1243.86	1245.57
O-02	1243.09	1243.94	1244.41	1241.03	1241.83	1243.88	1245.70
PW-07 (R-03)	1235.70	1236.41	1236.74	1234.02	1236.48	1236.55	1240.06
O-02	1243.09	1243.94	1244.41	1241.03	1241.83	1243.88	1245.70
O-03	1241.81	1242.61	1243.16	1240.25	1241.24	1242.69	1245.01
PW-08 (R-04)	1238.01	1238.79	1239.21	1236.32	1237.96	1238.77	1240.87
O-03	1241.81	1242.61	1243.16	1240.25	1241.24	1242.69	1245.01
PW-09 (R-05)	1236.48	1237.28	1237.69	1239.48	1237.04	1237.14	1239.75
O-04	1242.94	1243.80	1244.35	1241.69	1242.17	1244.08	1245.76
PW-10 (R-06)	1237.42	1238.10	1238.49	1234.58	1236.29	1239.46	1241.21
O-04	1242.94	1243.80	1244.35	1241.69	1242.17	1244.08	1245.76
O-05	1242.68	1243.42	1243.91	1240.99	1241.42	1243.61	1245.08
PW-11 (R-07)	1240.78	1241.45	1241.92	1238.81	1239.68	1241.14	1242.20
O-05	1242.68	1243.42	1243.91	1240.99	1241.42	1243.61	1245.08
O-06	1241.29	1243.24	1243.84	1240.71	1240.79	1243.08	1244.58
PW-12 (R-08)	1239.46	1240.09	1241.59		1236.28	1239.85	1241.49
O-06	1241.29	1243.24	1243.84	1240.71	1240.79	1243.08	1244.58
O-07	1243.03	1243.76	1244.30	1241.03	1241.11	1243.68	1245.13

Table 3. Injection well pressures

Ending	I-01			I-02			I-03			I-04		
Date	AVG	MIN	MAX	AVG	MIN	MAX	AVG	MIN	MAX	AVG	MIN	MAX
12/30/2018	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
12/31/2018	0.00	0.00	0.00	0.01	0.00	0.03	0.00	0.00	0.00	0.00	0.00	0.00
1/1/2019	0.00	0.00	0.00	0.98	0.00	3.01	0.00	0.00	0.00	0.00	0.00	0.00
1/2/2019	0.00	0.00	0.00	15.64	0.00	27.18	0.00	0.00	0.00	0.00	0.00	0.00
1/3/2019	0.01	0.00	0.03	39.04	25.78	49.54	0.00	0.00	0.00	0.01	0.00	0.03
1/4/2019	0.00	0.00	0.00	4.20	0.00	36.46	0.00	0.00	0.00	0.00	0.00	0.00
1/5/2019	0.00	0.00	0.00	1.17	0.08	4.32	0.00	0.00	0.00	0.00	0.00	0.00

FIGURES

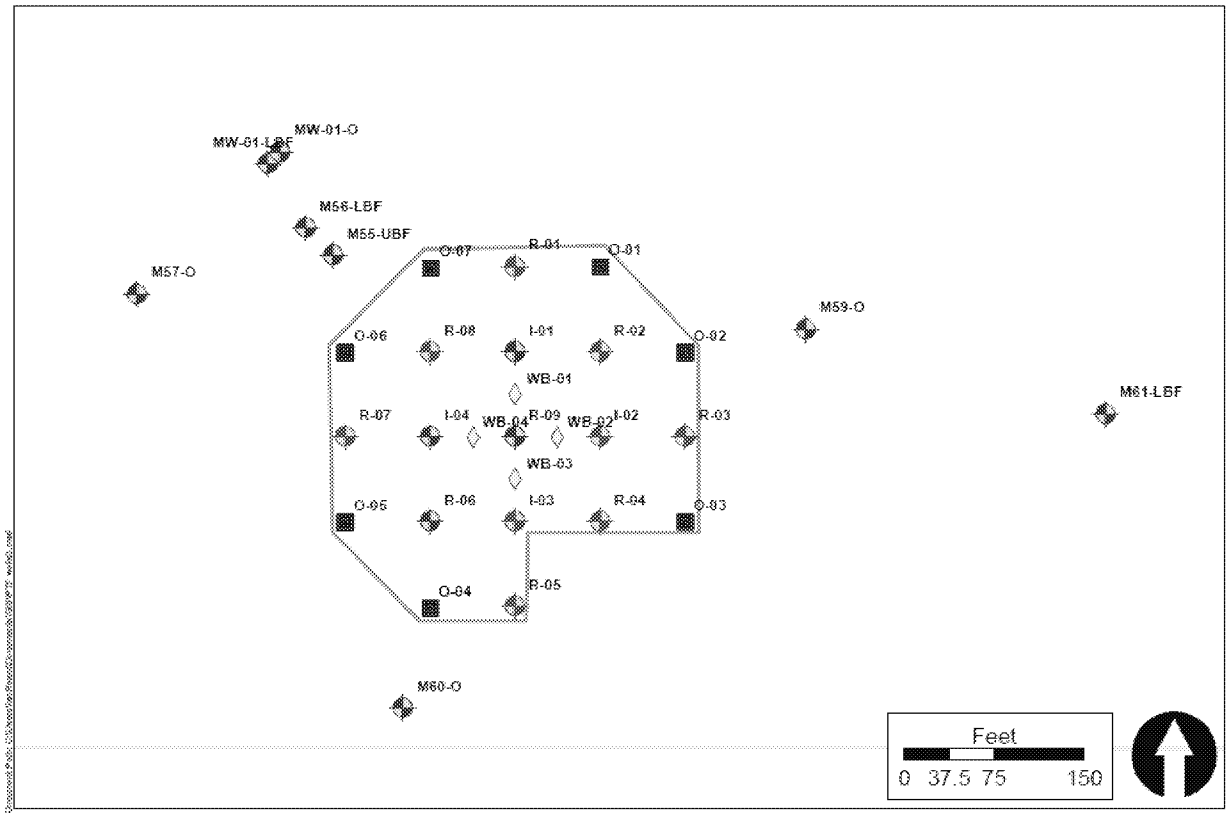


Figure 1. PTF injection, recovery, observation, and oxide monitoring well locations

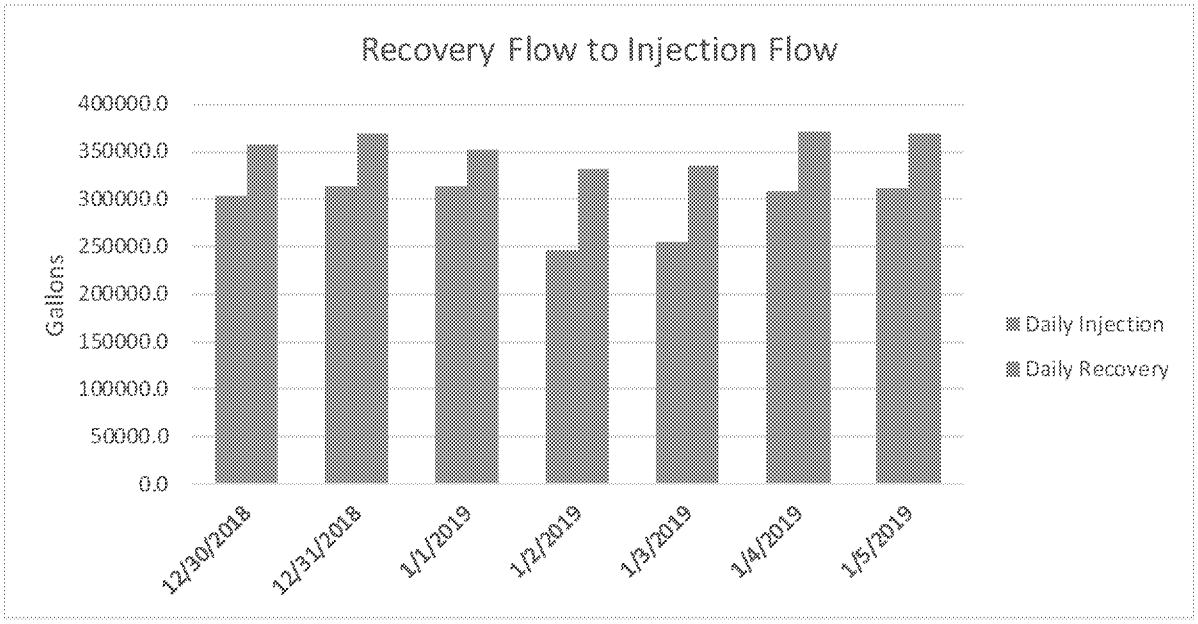


Figure 2. Recovered volume to injected volume

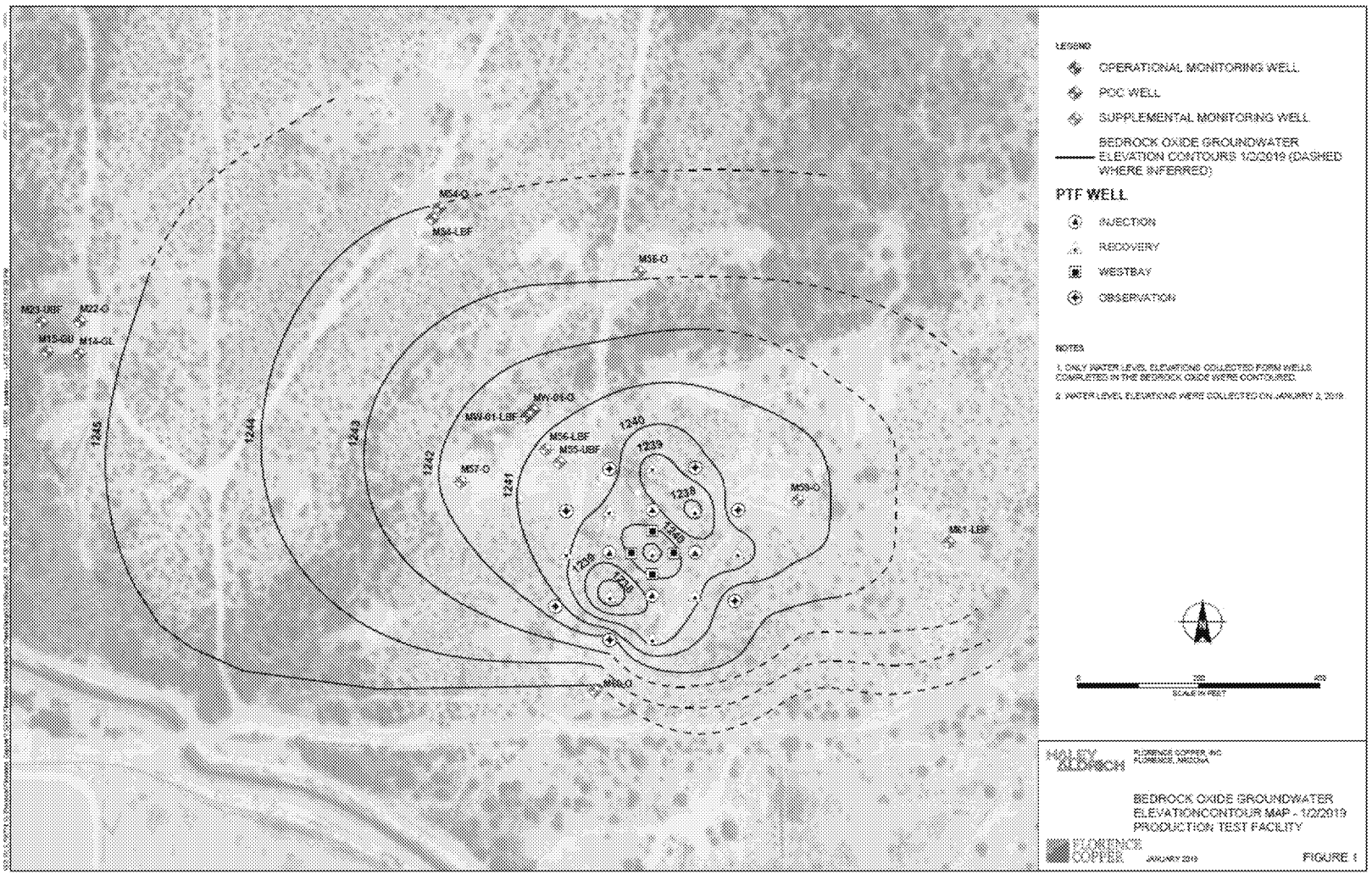
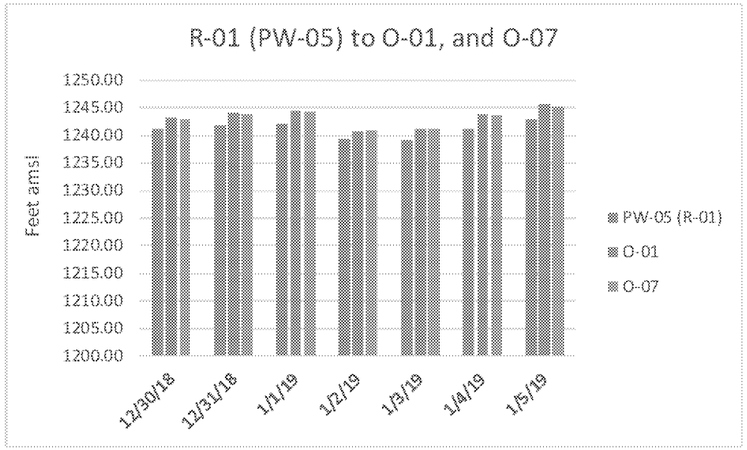
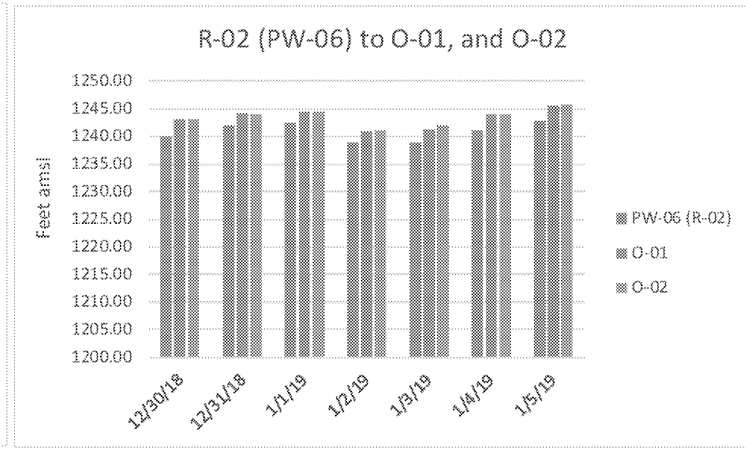
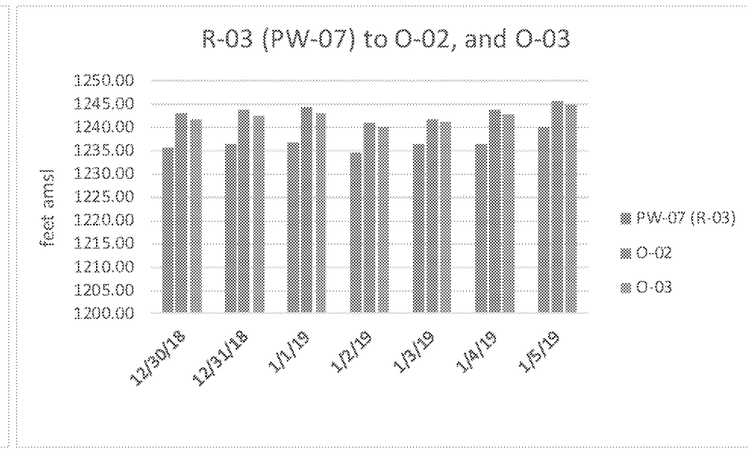
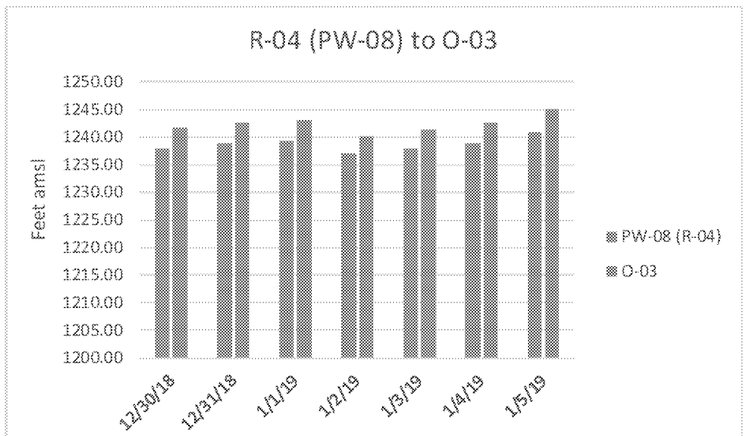


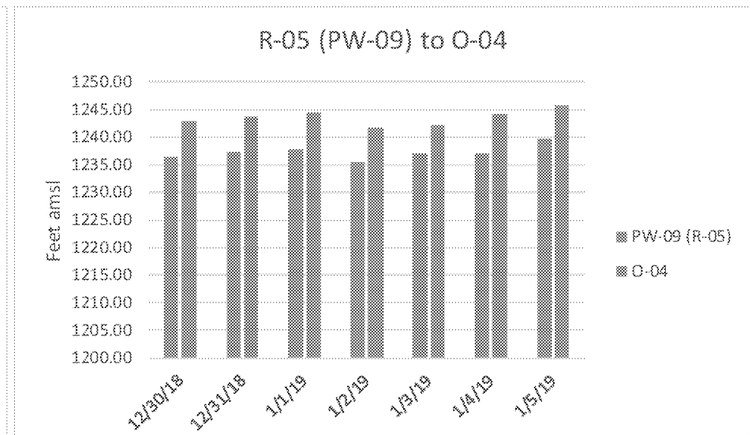
Figure 3. Groundwater contours on January 2, 2019, prior to re-installation of R-08 (PW-12)

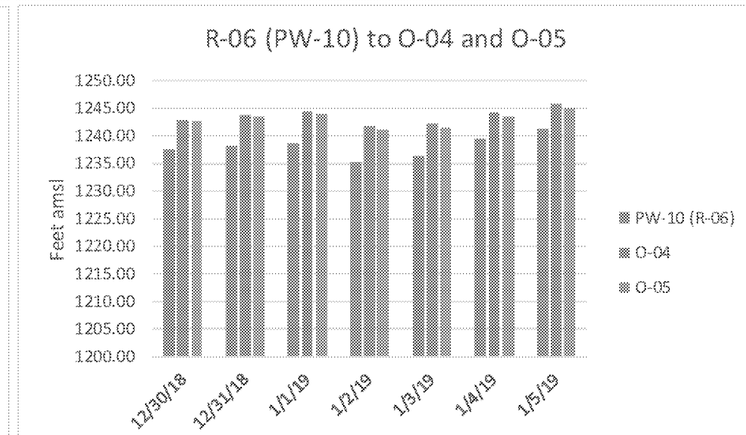


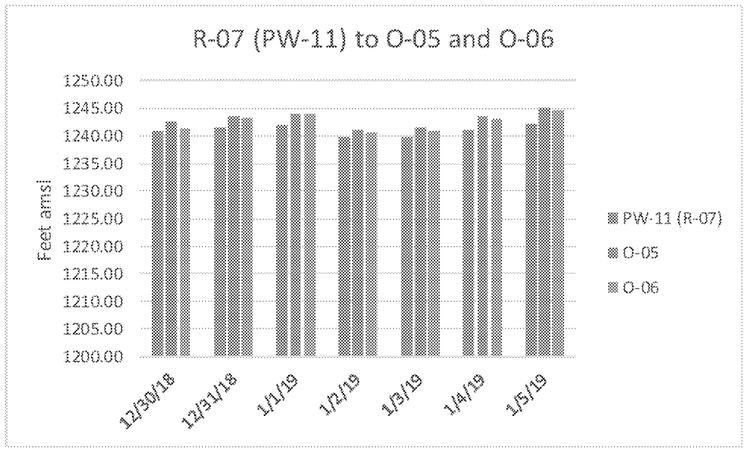












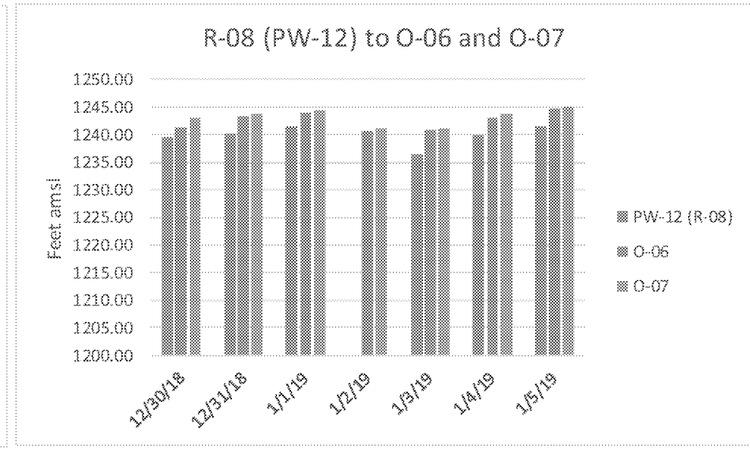


Figure 3. Recovery and observation well pairs